

CLAIMS

What is Claimed is:

- 5        1. A method for detecting an evoked response in a cardiac stimulation device implanted in a patient, the device having an evoked response detection algorithm, the method comprising:
  - receiving one or more signals from a sensor;
  - processing the one or more signals to determine a patient state; and
  - modifying the evoked response detection algorithm based on the detected patient state.
- 15        2. The method of claim 1, wherein the evoked response detection algorithm is modified by calibrating the algorithm using one or more parameter values pertaining to the detected patient state.
- 20        3. The method of claim 1, wherein the evoked response detection algorithm is modified by selecting one or more parameter values based on the detected patient state.
- 25        4. The method of claim 2, further comprising:
  - providing a first set of parameter values that correspond with a first patient state;
  - providing a second set of parameter values that correspond with a second patient state; and
  - modifying the set of parameter values to the first set or the second set based on the detected patient state.

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5           5.     The method of claim 1, further comprising:  
                  disabling the automatic capture detection function if the  
                  patient state is unstable.

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10           6.     An implantable cardiac device comprising:  
                  a memory configured to store plural sets of parameter  
                  values corresponding to various patient states;  
                  a sensor that is operative to generate one or more signals  
                  indicative of a patient state; and  
                  a controller that is operative to receive the one or more  
                  signals from the sensor, process the one or more signals to  
                  determine the patient state, and use the corresponding set of  
                  parameter values to process sensed electrical activity.

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10           7.     The system of claim 6, wherein the control circuitry is  
                  configured to modify the evoked response detection algorithm by:  
                  retrieving a position set comprising a plurality of parameter  
                  values pertaining to the orientation of the patient; and  
                  calibrating the evoked response detection algorithm using  
                  the position set of parameter values.

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20           8.     The system of claim 7, wherein the control circuitry is  
                  configured to calibrate the evoked response detection algorithm by:  
                  replacing the position set of parameter values with a new  
                  position set of parameter values in the evoked response detection  
                  algorithm; and

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employing the new operating set in the evoked response detection algorithm.

9. The system of claim 7, wherein the control circuitry is further 5 configured to:

establish a first setting for the position set of parameter

values when the patient is vertically oriented;

establish a second setting for the position set of parameter values when the patient is horizontally oriented; and

10 modify the set of parameter values to the first setting or the second setting based on the orientation of the patient.

10. The system of claim 6, wherein the control circuitry is further configured to disable the automatic capture detection function to prevent 15 false loss of capture detection when the signal indicates that the orientation of the patient is changing.

11. A method for modifying a detection algorithm implemented by an implantable stimulation device, comprising:

20 receiving one or more signals indicative of a patient state; processing the one or more signals to determine the patient state; and

modifying the detection algorithm based on the determined patient state.

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12. The method of claim 11, wherein receiving one or more signals comprises receiving one or more position signals.

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13. The method of claim 11, wherein receiving one or more signals comprises receiving one or more activity signals.

5 14. The method of claim 11, wherein receiving one or more signals comprises receiving one or more position signals and one or more activity signals.

10 15. The method of claim 11, further comprising providing plural sets of parameter values corresponding to various patient states, and wherein modifying the detection algorithm further comprises using the corresponding set of parameter values based on the determined patient state.

15 16. An implantable cardiac device comprising:  
a sensor that is operative to generate one or more signals indicative of a patient state; and  
a controller that is in communication with the sensor, the controller being programmed to apply a detection algorithm to  
20 received electrical activity signals, wherein the controller is operative to receive the one or more signals from the sensor, process the one or more signals to determine the patient state, and adjust one or more parameter values of the detection algorithm based on the determined patient state.

17. The implantable cardiac device of claim 16, wherein the sensor comprises a position sensor.

18. The implantable cardiac device of claim 16, wherein the  
5 sensor comprises an activity sensor.

19. The implantable cardiac device of claim 16, wherein the  
sensor comprises a position sensor, and further comprising an activity  
sensor that is operative to generate one or more signals indicative of an  
activity level of the patient.

20. The implantable cardiac device of claim 16, wherein the controller is operative to maintain a plurality of sets of parameter values corresponding to the respective patient states, and wherein the controller  
15 adjusts the detection algorithm by using one of the sets of parameter values based on the detected patient state.